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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,942	04/23/2007	Pradman Qasba	65426(47992)	7990

46037 7590 06/22/2010

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EXAMINER	
CHOWDHURY, IQBAL HOSSAIN	
ART UNIT	PAPER NUMBER
1652	
MAIL DATE	DELIVERY MODE
06/22/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/581,942	QASBA ET AL.	
	Examiner	Art Unit	
	IQBAL H. CHOWDHURY	1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 April 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-7,15,22,28,48 and 96-98* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-2, 4-7, 15, 22, 28, 48, 96-97 and 98* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Application Status

Claims 1-2, 4-7, 15, 22, 28, 48, 96-97 and 98 are currently pending.

In response to a previous Office action, a non-final action (mailed on November 2, 2009), Applicants filed a response and amendment on April 1, 2010, amending claims 1, 15 and 48, and canceling claims 3, 8-12, 28, 49-52 and 54-56, and adding new claims 96-97 and 98 is acknowledged.

Claims 1-2, 4-7, 15, 22, 28, 48, 96-97 and 98 are under consideration and are present for examination.

Applicants' arguments filed on April 1, 2010, have been fully considered but are not deemed persuasive to overcome some of the rejections previously applied. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn.

New-Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claim 1-2, 7, 15, 22, 28, and 48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite and vague for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1 and 15 are indefinite in the recitation “a purified and isolated catalytic domain from β(1,4)-

galactosyltransferase I consisting of SEQ ID NO: 6 and comprising a conservative amino acid exchange at amino acid position 344", which is confusing because it is not clear as to the phrase "amino acid exchange at position 344" refers to what protein? Does it refer to a catalytic domain protein or β(1,4)-galactosyltransferase I protein consisting of SEQ ID NO: 6?

Maintained-Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The previous rejection of Claims 1, 2, 4-6, 7, 15, 22, 28 and 48 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement is maintained and new claims 96-98 are included in this rejection. This rejection has been discussed at length in the previous office action and the rejection is maintained as discussed previously and for the following reasons.

Claims 1, 2, 4-6, 7, 15, 22, 28, 48 and 96-98 are directed to a mutated catalytic domain from a β(1,4)-galactosyltransferase I, wherein the conservative mutation at position 344 corresponding to β(1,4)-galactosyltransferase I consisting of SEQ ID NO: 6, which catalyzes formation of galactose-β(1,4)-N-acetylglucosamine bond in the presence of magnesium. Thus, claims are directed to any mutated catalytic domain from a β(1,4)-galactosyltransferase I of SEQ ID NO: 6, comprising a conservative amino acid exchange at position 344 and 342 (claims 1 and 6) corresponding to SEQ ID NO:

6, which catalyzes formation of galactose-β(1,4)-N-acetylglucosamine bond in the presence of magnesium, however, the phrase "comprising" does not rule out other mutations at other positions corresponding to SEQ ID NO: 6. Claims are thus drawn to any mutated catalytic domain from a β(1,4)-galactosyltransferase I of SEQ ID NO: 6 comprising any number of conservative amino acid exchange including positions 344 and 342, corresponding to SEQ ID NO: 6. The specification does not contain any disclosure of the structure of all the mutants, variants or fragments of any catalytic domain from β(1,4)-galactosyltransferase I of SEQ ID NO: 6. The genus of polypeptides as claimed is a large variable genus including many mutants, variants and fragments, which can have wide variety of structures. Therefore, many structurally unrelated polypeptides are encompassed within the scope of the claims. The specification discloses the structure of only a single representative species of the claimed genus (SEQ ID NO: 6) and few mutants, which is insufficient to put one of skill in the art in possession of the attributes and features of all species within the claimed genus. Therefore, one skilled in the art cannot reasonably conclude that applicant had possession of the claimed invention at the time the instant application was filed.

Arguments/Response:

Applicants argue that Applicants have amended the claims to recite that the catalytic domain from a β(1,4)-galactosyltransferase I consists of SEQ ID NO: 6 and further argue that as pointed out by the Examiner that the specification discloses the structure of SEQ ID NO: 6 to convey to one skilled in the art that the inventors had possession of the claimed invention.

Applicant's arguments and amendments to claims have been fully considered but are not deemed persuasive to overcome the rejection on Written Description issues. The Examiner acknowledges addition of limitations in claims 1 and 15, however the amendment does not give enough structural feature of any mutated catalytic domain from a β(1,4)-galactosyltransferase I of SEQ ID NO: 6 comprising any number of conservative amino acid exchange including positions 344 and 342, corresponding to SEQ ID NO: 6, that is required for fulfilling Written description requirements. As discussed in the written description guidelines the written description requirement for a claimed genus may be satisfied through sufficient description of a representative number of species by actual reduction to practice, reduction to drawings, or by disclosure of relevant, identifying characteristics, i.e., structure or other physical and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show the applicant was in possession of the claimed genus. A representative number of species means that the species, which are adequately described are representative of the entire genus. **Thus, when there is substantial variation within the genus, one must describe a sufficient structure and variety of species to reflect the representative structure variation within the genus.** Satisfactory disclosure of a representative structure and number depends on whether one of skill in the art would recognize that the applicant was in possession of the necessary common attributes or features of the elements possessed by the members of the genus in view of species disclosed. For inventions in an unpredictable art, adequate

written description of a genus, cannot be achieved by disclosing the structure of small portion of only one species within the genus. The genus of any mutated catalytic domain from a β(1,4)-galactosyltransferase I comprising any number of conservative amino acid exchange including positions 344 and 342 is structurally diverse as it broadly encompasses many mutants, variants and recombinants having β(1,4)-galactosyltransferase activity having different structures. As such, the disclosure solely of functional features coupled with minor structural feature that may or may not present in all members of the genus is insufficient to be representative of the attributes and features of the entire genus. Therefore, the rejection is maintained.

The previous rejection of Claims 1, 2, 4-6, 7, 15, 28 and 48 under 35 U.S.C. 112, first paragraph on Scope of enablement is maintained and claims 96-98 are included in this rejection. This rejection has been discussed at length in the previous office action and the rejection is maintained as discussed previously and for the following reasons.

The specification, while being enabling for mutated catalytic domains of a galactosyltransferase I of SEQ ID NO: 6, which catalyzes formation of galactose-β(1,4)-N-acetylglucosamine bond in the presence of magnesium, wherein the mutations are at positions 344, 342, 228 and 229 of a galactosyltransferase I of SEQ ID NO: 6 such as M344H, M344E, M344A, M344S, M344QC342T, R228K and A229G, does not reasonably provide enablement for claims are directed to any mutated catalytic domain from a β(1,4)-galactosyltransferase I of SEQ ID NO: 6, comprising a conservative amino acid exchange at position 344 and 342 (claims 1 and 6) corresponding to SEQ ID NO:

6, which catalyzes formation of galactose-β(1,4)-N-acetylglucosamine bond in the presence of magnesium, however, the phrase "comprising" does not rule out other mutations at other positions corresponding to SEQ ID NO: 6. Claims are thus drawn to any mutated catalytic domain from a β(1,4)-galactosyltransferase I of SEQ ID NO: 6 comprising any number of conservative amino acid exchange including positions 344 and 342, corresponding to SEQ ID NO: 6. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Arguments/Response:

Applicants argue that applicants have amended the claims to recite a purified and isolated catalytic domain from a 13(1,4)-galactosyltransferase I consisting of SEQ ID NO:6, and comprising a conservative amino acid exchange at amino acid position 344, wherein the catalytic domain catalyzes formation of galactose- β (1,4)-N-acetylglucosamine bond in the presence of magnesium. The specification provides ample teaching to enable one skilled in the art to make and use the claimed invention in a manner reasonably correlated with the scope of the present claims. Applicants describe at p10 of the application, catalytic domains that catalyze formation of a bond between a donor and an acceptor to form β (galactose1,4)-N-acetylglucosamine bonds. Further, at page 11 of the application, Applicants provide an example of a specific exchange, M344H: In the presence of $Mg^{2+,}$ the mutant, M344H-GaI-T1, exhibited 25% of the catalytic activity observed with the wild- type enzyme in the presence of $Mn^{+,}$ It also has higher Km for the substrates. The crystal structures of M344H-GaI-T1 in

complex with either UDP-Gal Mn++ or UDP-Gal $Mg^{2+,}$ and the crystal structure of M344E-GaI-T1 in complex with UDP-Gal $Mn^{2}+,$ have been determined at 2.3 ANG. The structures show that the coordination stereochemistry of $Mg^{2÷}$ is quite similar to that of $Mn^{2+.}$ Both His344 and Glu344 in the mutants exhibit stronger coordination bonds with the metal ion compared to Met344 in the wild-type enzyme. This strong metal-ion coordination in the mutants appears to reduce kcat by interfering with the ability of the long flexible loop to undergo the required conformational changes during the catalytic cycle, but also by interfering with the formation of the transition state complex. Further, Applicants teach the metal specificity of the mutants, where: it was determined that the mutant M344H-GaI-T1, in the presence of $Mn^{2+,}$ has only 1.5% of the wild-type enzyme activity. On the other hand, the mutant M344H-GaI-T1 exhibits 25% of its catalytic activity in the presence of an alkali metal ion, $Mg^{2+.}$ In contrast, Mg^{2+} does not activate the wild-type enzyme• Although metal ions Mg^{2+} and Mn^{2+} bind to the mutant M344H-GaI-T1, their enzyme kinetics are different, indicating that the residue at position 344 and the appropriate metal ion play an important role in the conformational dynamics of the long loop in the catalytic mechanism of 64GaI-T1. Applicants also teach that amino acid residues that are involved with metal binding and that can be mutated can optionally include an additional mutation corresponding to amino acid position 342. For example, at p11, Applicants teach that "such a mutation may include exchange of cysteine at amino acid position 342 with threonine (C342T). However, other amino acids may be exchanged for cysteine that provide an active catalytic domain". Accordingly, the teachings of the specification enable one of skill in the art to practice the full scope

of the claimed invention. Applicants request that the rejection be reconsidered and withdrawn.

Applicant's arguments have been fully considered, but they are found unpersuasive. In the previous Office action, the examiner established a *prima facie* case for lack of enablement based on sound scientific reasoning; applicants provided no evidence to support the adequacy of their disclosure to enable the full scope of the claimed invention. Applicants must provide evidence or sound scientific reasoning top rebut a *prima facie* case of lake of enablement.

Claims as amended still read on any mutated catalytic domain from a β(1,4)-galactosyltransferase I of SEQ ID NO: 6, comprising any number of conservative amino acid exchange including positions 344 and 342, corresponding to SEQ ID NO: 6, which is still enormously broad, which provides little structural information and one of ordinary skilled in the art would not know how to make claimed invention without substantial structural feature of the claimed mutant protein for use and requires many undue experimentation to practice the claimed invention.

The specification does not support the broad scope of the claims which encompass any mutated catalytic domain from a β(1,4)-galactosyltransferase I consisting of SEQ ID NO: 6 comprising any number of conservative amino acid exchange including positions 344 and 342, corresponding to SEQ ID NO: 6 because the specification does **not** establish: (A) regions of the protein structure which may be modified without affecting galactosyltransferase activity; (B) the general tolerance of galactosyltransferase polypeptides to modification and extent of such tolerance; (C) a

rational and predictable scheme for modifying any amino acid residue in galactosyltransferase polypeptide of SEQ ID NO: 6 with an expectation of obtaining the desired biological function; and (D) the specification provides insufficient guidance as to which of the essentially infinite possible choices is likely to be successful.

Thus, applicants have not provided sufficient guidance to enable one of ordinary skill in the art to make and use the claimed invention in a manner reasonably correlated with the scope of the claims broadly including any mutated catalytic domain from a β(1,4)-galactosyltransferase I of SEQ ID NO: 6 comprising any number of conservative amino acid exchange including positions 344 and 342, corresponding to SEQ ID NO: 6.

The scope of the claims must bear a reasonable correlation with the scope of enablement (In re Fisher, 166 USPQ 19 24 (CCPA 1970)). Without sufficient guidance, determination of any mutated catalytic domain from a galactosyltransferase I having the desired biological function is unpredictable and the experimentation left to those skilled in the art is unnecessarily, and improperly, extensive and undue. See In re Wands 858 F.2d 731, 8 USPQ2nd 1400 (Fed. Cir, 1988). Therefore, the rejection is maintained.

Withdrawn-Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The previous rejection of Claims 1, 2, 7, 15 and 48 under 35 U.S.C. 102(b) as

being anticipated by Vadaie et al. (Identification and characterization of a Drosophila melanogaster ortholog of human beta1,4-galactosyltransferase VII. Glycobiology. 2002 Oct;12(10):589-97) is withdrawn in view of amendment of the claims 1 and 15, i.e. "claims 1 and 15 now recite "consisting of SEQ ID NO: 6, and comprising a conservative amino acid exchange at amino acid position 344". The reference does not teach that the enzyme is β(1,4)-galactosyltransferase I consisting of SEQ ID NO: 6 and having an exchange at position 344.

New-Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 7, 28 and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by Boeggeman et al. (Mutation Met344his in bovine β(1,4)-galactosyltransferase I broadens its primary metal ion specificity, Glycobiology, 13(11), Nov 2003, page 869, and 8th Annual Conference of the Society for Glycobiology; Sandi ego, California, USA; December 03-06, 2003, see, IDS).

Boeggeman et al. teach a conservative mutant of β(1,4)-galactosyltransferase-1 from bovine, wherein the conservative mutation at position 344 is Met344His, i.e. histidine is replaced methionine, which transfers galactose to its acceptor molecule in the presence of magnesium, wherein the unmutated β(1,4)-galactosyltransferase-1 from

bovine comprises SEQ ID NO: 6 because SEQ ID NO: 6 is from bovine, which comprises catalytic domain.

Therefore, Boeggeman et al. anticipate claims 7, 28 and 48 of the instant application as written.

New-Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-2, 4-6, 15, 22, 96-97 and 98 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boeggeman et al. (Mutation Met344his in bovine β(1,4)-galactosyltransferase I broadens its primary metal ion specificity, Glycobiology, 13(11), Nov 2003, page 869, and 8th Annual Conference of the Society for Glycobiology; San-Diego, California, USA; December 03-06, 2003, see, IDS) as applied to claims 7, 28 and 48 above, and further in view of Ramakrishnan et al. (alpha-Lactalbumin (LA) stimulates milk beta-1,4-galactosyltransferase I (beta 4Gal-T1) to transfer glucose from UDP-glucose to N-acetylglucosamine. Crystal structure of beta 4Gal-T1 x LA complex with UDP-Glc, J Biol Chem. 2001 Oct 5;276(40):37665-71. Epub 2001 Aug 2, see IDS).

Boeggeman et al. teach a conservative mutant of β(1,4)-galactosyltransferase-1 from bovine, wherein the conservative mutation at position 344 is Met344His, i.e. histidine is replaced methionine, which transfers galactose to its acceptor molecule in the presence of magnesium, wherein the unmutated β(1,4)-galactosyltransferase-1 from bovine comprises SEQ ID NO: 6 because SEQ ID NO: 6 is from bovine, which comprises catalytic domain. Boeggeman et al. do not teach an isolated and purified catalytic domain from β(1,4)-galactosyltransferase-1 of SEQ ID NO: 6, wherein said catalytic domain also comprises a mutation at position 342 having cysteine in place of threonine.

Ramakrishnan et al. teach isolating a mutant catalytic domain of β(1,4)-galactosyltransferase from bovine, wherein the mutation at position 342 is Cys342Thr,

i.e. threonine is replaced with cysteine, wherein the catalytic domain comprises amino acid residue 130-402 of β(1,4)-galactosyltransferase-1 having 18% more activity than wild type enzyme. Ramakrishnan et al. also teach that lactalbumin stimulates β(1,4)-galactosyltransferase-1 and mutants Cys342Thr catalytic domain, activity to 30 fold (abstract, p37666, left column, paragraph 2, p37667 and Table II).

Ramakrishnan et al. clearly teach isolating a catalytic domain of β(1,4)-galactosyltransferase-1 and making a mutation at position 342 as Cys342Thr. Ramakrishnan et al. clearly indicated that catalytic domain is from amino acid residue 130-402 of β(1,4)-galactosyltransferase-1 and further teach that mutations were performed by using a vector pEGT-d129 comprising catalytic domain of β(1,4)-galactosyltransferase-1 and isolating said catalytic domain having mutation Cys342Thr.

By combining the teachings of Boeggeman et al. and Ramakrishnan et al. it would have been obvious to one of ordinary skill in the art at the time of the invention was made to make a mutation at position 344 of β(1,4)-galactosyltransferase-1 as replacing methionine with histidine as taught by Boeggeman et al. in the in the catalytic domain comprising a mutation at position 342 of β(1,4)-galactosyltransferase-as taught by Ramakrishnan et al. to arrive the claimed invention.

One of ordinary skilled in the art would have been motivated to make a mutation at position 344 of the catalytic domain of β(1,4)-galactosyltransferase-1 because such mutation increases the catalytic activity of the protein as taught by Boeggeman et al. One of ordinary skill in the art would have a reasonable expectation of success because Boeggeman et al. could successfully made a mutation at position 344 having increased

activity and one of ordinary skill in the art expect to do so in view of high level of skill and expertise

Therefore, the above references as a whole render the claims 1-2, 4-6, 15, 22, 96-97 and 98, a *prima facie* obvious to one of ordinary skill in the art.

Conclusion

Status of the claims:

Claims 1-2, 4-7, 15, 22, 28, 48, 96-97 and 98 are pending.

Claims 1-2, 4-7, 15, 22, 28, 48, 96-97 and 98 are rejected.

No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Iqbal Chowdhury whose telephone number is 571-272-8137. The examiner can normally be reached on 9:00-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang can be reached on 571-272-0811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Iqbal Chowdhury, Patent Examiner
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/Richard G Hutson/
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